



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Radiation Matter Interaction

2021-1-F5302Q007

Aims

Aim of the course is to give the basis of the mechanisms of energy transfer from ionizing radiation to materials and to introduce some applications based on the interaction of ionizing radiation with materials

Contents

Radioactivity. Sources of ionizing radiation. Energy transfer from radiation to materials. Application of experimental techniques based on the interaction radiation-matter.

Detailed program

Sources of ionizing radiation. Energy transfer from radiation to materials. Defects induced by radiation. Experimental techniques for the study of the effects of the interaction radiation-matter on the physical properties of the materials: nuclear techniques, as Accelerator Mass Spectrometry (AMS), luminescence techniques and X-ray Fluorescence (XRF), with particular focus on archaeometric applications, like dating and ancient materials identification and measurements.

Prerequisites

Basic knowledge of physics of matter

Teaching form

Lessons and exercises. Visits to research laboratories.

In case of limitations due to Covid-19 emergency, the lessons will be given in asynchronous remote registration, with possible meetings in videoconferencing

Textbook and teaching resource

Ppt presentations and "ad hoc" textbook

Semester

Second semester (March-June)

Assessment method

Oral test.

The basis of the interaction of radiation with materials will be assessed, together with the knowledge of the techniques introduced during the lessons.

In the period of Covid-19 emergency, the oral tests will be telematic only. The webex platform will be used and in the e-learning page a public link will be given in order to let other virtual people follow the exam test.

Office hours

On request contacting the teacher at: m.martini@unimib.it
